ANNUAL REPORT 1965

GEORGETOWN

water pollution control plant

DIVISION OF PLANT OPERATIONS

Ontario Water Resources Commission

ONTARIO WATER RESOURCES COMMISSION

OFFICE OF THE GENERAL MANAGER

Members of the Georgetown Local Advisory Committee,
Town of Georgetown.

Gentlemen:

I am pleased to provide you with the 1965 Annual Report for the Georgetown Water Pollution Control Plant, OWRC Project Nos. 58-S-17 and 61-S-77 .

We appreciate the co-operation you have extended to our Operations staff throughout the year, and trust that continuation of this close association will ensure even greater progress in the sphere of water pollution control .

Yours very truly,

D. S. Caverly,
General Manager.

ONTARIO WATER RESOURCES COMMISSION

801 BAY STREET

TORONTO 5

J. A. VANCE, LL.D.
CHAIRMAN

J. H. H. ROOT, M.P.P.
VICE-CHAIRMAN

D. S. CAVERLY
GENERAL MANAGER

W. S. MacDONNELL
COMMISSION SECRETARY

General Manager,
Ontario Water Resources Commission.

Dear Sir:

I am pleased to provide you with the 1965 Annual Report on the operation of the Georgetown Water Pollution Control Plant, OWRC Project Nos. 58-S-17 and 61-S-77.

The report presents design data, outlines operating problems encountered during the year and summarizes in graphs, charts and tables all significant flow and cost data.

Yours very truly,

B. C. Palmer, P. Eng.,
Director,
Division of Plant Operations.

FOREWORD

This report provides useful information on the operating efficiency of this project during 1965. It is intended to act as a guide in gauging plant performance. To implement that aim, it includes detailed statistical and cost data, a description of the project and a summary of its operation during the year.

Of particular interest will be the cost data, which show the total cost to the municipality and the areas of major expenditure.

The Regional Operations Engineer is primarily responsible for the preparation of the report, and has compiled and arranged the material. He will be pleased to answer any questions regarding it. Other groups, however, were involved in the production, and these include the statistics section, the Drafting Section of the Division of Sanitary Engineering and the Division of Finance.

B. C. Palmer, P. Eng.,
Director,
Division of Plant Operations.

CONTENTS

GEORGETOWN

water pollution control plant

operated for

THE TOWN OF GEORGETOWN

by the

ONTARIO WATER RESOURCES COMMISSION

CHAIRMAN: Dr. James A. Vance

VICE-CHAIRMAN: J. H. H. Root, M.P.P.

COMMISSIONERS

W. D. Conklin, Q.C.
D. A. Moodie
H. E. Brown
L. E. Venchiarutti

GENERAL MANAGER: D. S. Caverly

ASSISTANT GENERAL MANAGERS

L. E. Owers
F. A. Voege
K. H. Sharpe
A. K. Watt

COMMISSION SECRETARY

W. S. MacDonnell

DIVISION OF PLANT OPERATIONS

DIRECTOR: B. C. Palmer

Assistant Director: C. W. Perry
Regional Supervisor: D. A. McTavish
Operations Engineer: B. W. Hansler

801 Bay Street Toronto 5

'65 REVIEW

A total of 346.54 million gallons of sewage was treated during the year at a total operating cost of $31,209.58. The operating cost per million gallons and the cost per pound of BOD removed were $90.06 and $0.16 respectively.

The average daily flow during the year was 0.95 million gallons which was an increase of 13.1 percent as compared to the average daily flow of 0.94 million gallons in 1964. Average daily flows exceeded the design average daily flow 5.5 percent of the time.

The raw sewage BOD did not exceed the design value of 200 ppm while the raw sewage suspended solids concentration exceeded the design value of 200 ppm 40% of the time. The final effluent BOD and suspended solids concentrations exceeded the Commission objective of 15 ppm, 32 percent and 67 percent of the time respectively. The effluent BOD was substantially greater than the Commission objective during August and September. This was also the case during the fall with the effluent suspended solids. Industrial wastes received at the plant was the major contributing factor to this situation.

Under supervision by head office engineers, the plant staff has operated a clean, attractive and efficient plant for the Town of Georgetown.

GLOSSARY

BTU	British Thermal Unit
flocculation	bringing very small particles together to form a larger mass (the floc) before settling
fps	feet per second
gpm	gallons per minute
lin. ft.	linear feet
mgd	million gallons per day
pH	a symbol for hydrogen-ion concentration; a pH test determines the intensity of the acidity or alkalinity of a water
ppm	parts per million
ss	suspended solids
SWD	side wall depth
TDH	total dynamic head (usually refers to pressure on a pump when it is in operation)
turbidity	a measurement of the amount of visible material in suspension in water

HISTORY
1957 - 1965

INCEPTION

On July 31, 1957, the Town of Georgetown, in cooperation with the Ontario Water Resources Commission, initiated plans for the construction of a modern water pollution control plant. The firm of Proctor & Redfern, Toronto, Ontario, Consulting Engineers, was engaged to prepare plans and specifications for the project.

APPROVAL

Ontario Municipal Board approval for this project was granted on July 15, 1958 and on August 6th, 1958, the town signed an agreement with the Ontario Water Resources Commission to finance, construct and operate the project.

CONSTRUCTION

The contract was awarded to Frid Construction Company of Hamilton, Ontario who began work in April, 1959. Construction was substantially completed in April 1961. Full scale operation was commenced in June of 1961.

ADDITIONS

In March, 1961, a municipal agreement was reached for the completion of construction of a sewage pumping station and forcemain to serve the east Georgetown industrial area. The firm of Proctor and Redfern, Consulting Engineers, was engaged to prepare plans and specifications.

On February 6, 1962, the town signed a final agreement with the Ontario Water Resources Commission to finance, construct and operate the project. The construction contract was awarded to A. J. McCarthy Construction.

TOTAL COST

58-S-17	$823,297.68
61-S-77	$ 44,158.21

F. W. SMITH
CHIEF OPERATOR

Project Staff

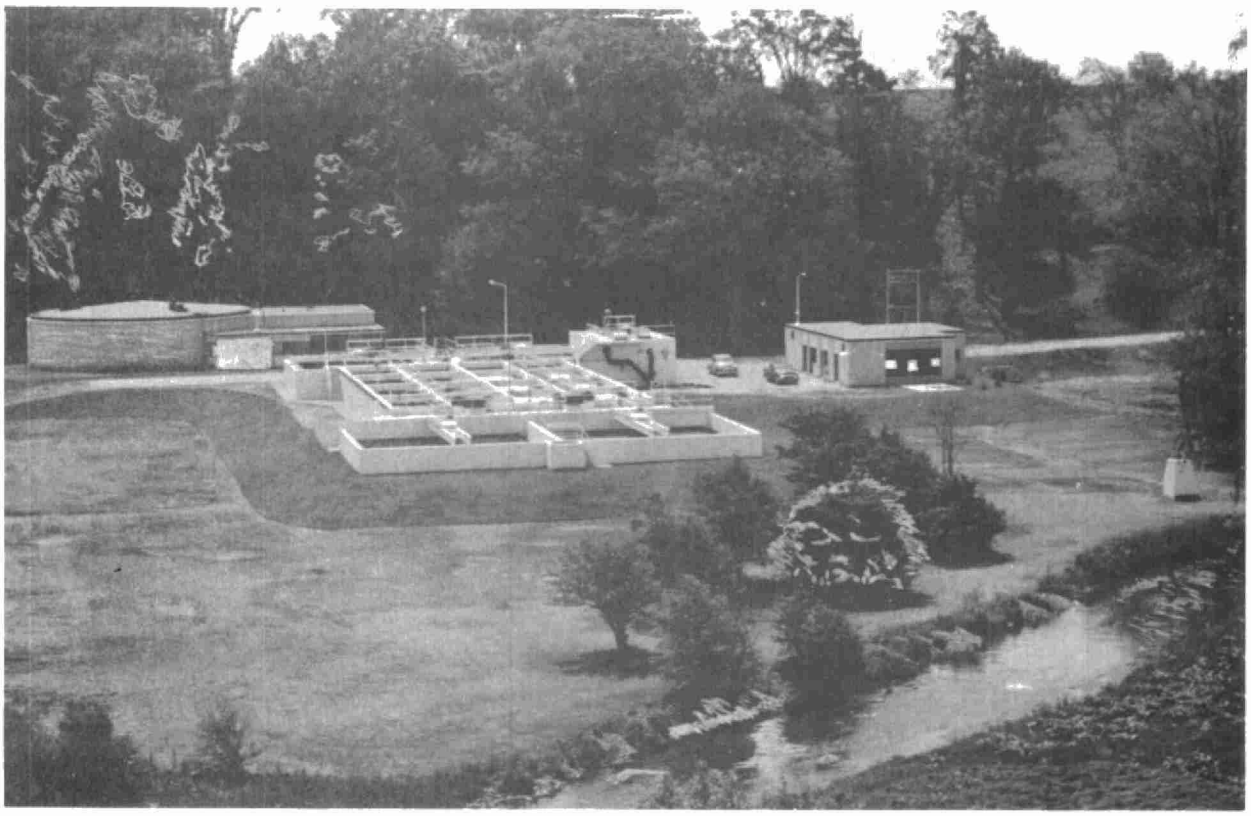
Operators: R. A. Rolfe
K. J. Lee

COMMENTS

The normal complement of staff consisted of one Chief Operator and two operators.

During the week, Monday to Friday, the plant was staffed eight hours per day. Staff rotation provided four hours coverage per day on Saturday and Sunday.

Mr. Rolfe completed the first two courses leading to the Certificate of Qualification as a Water Pollution Control Plant operator during 1965. He will complete the series of courses in 1966.



Description of Project

INFLUENT WORKS

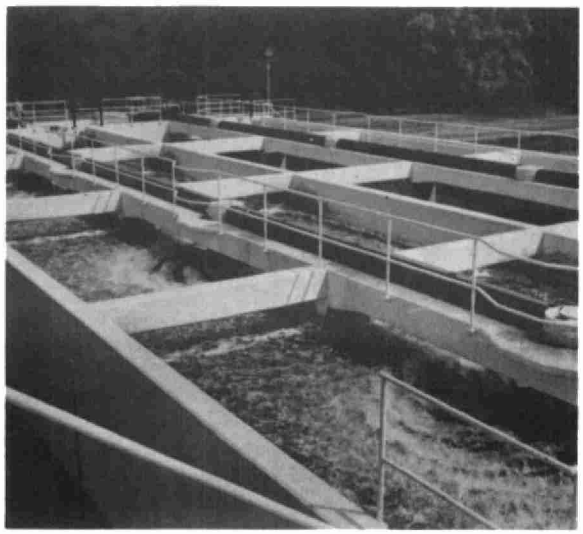
Sewage enters the plant through a trunk sewer and then passes through a Chicago Pump Company barminutor which cuts and shreds the larger solids in the sewage. A coarse bar screen may be used as a barminutor bypass. Flow from the barminutor is received by the raw sewage pump wet well.

Two Flomatcher controlled variable speed 50 hp sewage pumps lift the sewage to an elevated flowmeter. Flow measurements are continuously recorded from signals originating from the sewage passing through a 12 inch throat Parshall flume. The flow next enters the grit removal facilities.

Grit is removed by a Dorr-type W. A. detritor. The 12 foot square, flow through tank is equipped with a raking mechanism to remove the settled grit. The grit is automatically washed before disposal on the plant site.

PRIMARY CLARIFIERS

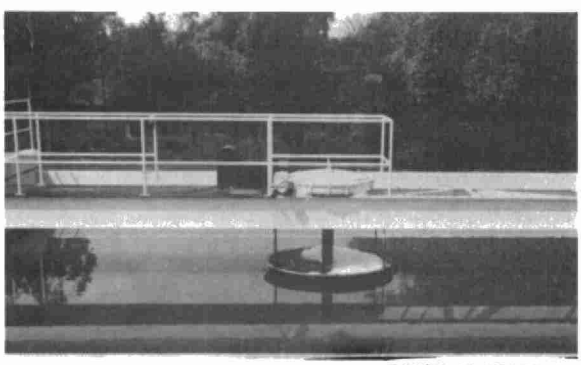
Two 35 ft. square x 10 ft. side wall depth concrete primary clarifier tanks receive gravity flow from the detritor. The tanks are equipped with a circular scraping mechanism to remove the sludge which settles to the bottom and a skimmer arm to remove the grease and floating solids. Sludge and scum are pumped to the primary digester. The retention time in the primary clarifiers, at design flow of 1. 5 MGD, is 2. 5 hours.



AERATION TANKS

AERATION

Primary effluent is mixed with return activated sludge and aerated in two 28 ft. x 112 ft. x 13.25 ft. deep, four cell mechanical aeration tanks. Air is supplied by eight Ames Crosta Simplex high intensity mechanical aerators. Oxygen transfer can be regulated by adjusting variable level effluent weirs. Adsorption and aerobic digestion of suspended and dissolved organic solids occurs due to the action of bacteria and enzymes in the mixed liquor. Aeration retention time is approximately 7.5 hours at design flow.



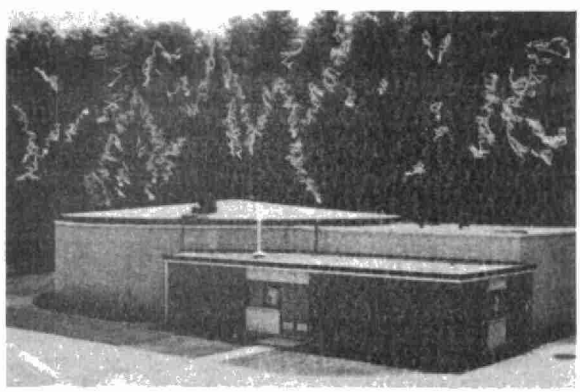
FINAL CLARIFIERS

FINAL CLARIFIERS

Two 40 ft. square by 10 ft. SWD concrete clarifiers receive gravity flow from the aeration section. Activated sludge settles to the tank bottom where it is collected by a circular scraping mechanism. A portion of this sludge is returned to the aeration section and the remainder is wasted to the primary clarifiers. The clear liquid remaining in the clarifiers overflows a peripheral weir and is directed to the chlorine contact chamber.

CHLORINE CONTACT CHAMBER

The concrete chamber is located close to the Silver Creek. It measures 24 ft. x 15 ft. x 6 ft. deep and provides a retention time of 26 minutes at design flow. Chlorine is fed to this tank by a 150 pound per day capacity gas chlorinator located in the control building. The contact chamber is close coupled to a spillway outfall structure. The effluent is then directed to Silver Creek.



DIGESTION BUILDING

DIGESTION TANKS

A 66 ft. diameter primary digester equipped with three mechanical draft tube mixers receives all of the sludge from the plant. This unit has a capacity of 484,800 gallons. Anaerobic digestion of the sludge occurs converting volatile solids into water and methane gas. The gas produced is used to heat the digesters to the optimum digestion temperature.

A 34 ft. square conditioning tank, having 134,000 gallon capacity receives sludge by gravity from the primary digester. This tank is unheated and remains quiescent to allow stratification into a bottom layer of relatively clear supernatant.

PROJECT COSTS

NET CAPITAL COST (Final)	58-S-17	$871,677.01	
DEDUCT payments from Municipalities		48,379.33	
Long Term Debt to OWRC			$823,297.68
NET CAPITAL COST (Final)	61-S-77	$ 63,230.31	
DEDUCT Portion Financed by CMHC (Final)		19,072.10	
Total Long Term Debt to OWRC			$ 44,158.21
Long Term Debt to OWRC			$867,455.89
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1965	58-S-17	$ 93,776.17	
	61-S-77	3,106.18	$ 96,882.35

BILLINGS

	S-17	S-77	TOTAL
Net Operating	$31,209.58	$ 3.33	$ 31,212.91
Debt Retirement	16,614.00	891.00	17,505.00
Reserve	5,710.20	415.66	6,125.86
Interest Charged	46,192.80	2,477.57	48,670.37
TOTAL	$99,726.58	$ 3,787.56	$103,514.14

RESERVE ACCOUNT

	S-17	S-77	TOTAL
Balance @ Jan. 1, 1965	$26,462.65	$1,187.02	$27,649.67
Deposited by Municipality	5,710.20	415.66	6,125.86
Interest Earned	1,586.36	74.34	1,660.70
	$33,759.21	$1,677.02	$35,436.23
Less Expenditures	1,218.00	-	1,218.00
Balance @ Dec. 31, 1965	$32,541.21	$1,677.02	$34,218.23

MONTHLY OPERATING COSTS

MONTH	TOTAL EXPENDITURE	PAYROLL	CASUAL PAYROLL	FUEL	POWER	CHEMICAL	GENERAL SUPPLIES	EQUIPMENT	REPAIRS & MAINTENANCE	*SUNDRY
JAN	2314.56	1070.60				224.03	74.09	68.60	239.77	637.47
FEB	2310.19	1098.72			295.99		108.22		48.89	758.37
MARCH	2464.28	1368.54		312.04	315.63	246.26	100.51	7.57	25.52	88.21
APRIL	2516.58	1332.18		104.90	241.08		31.01	35.37	133.12	638.92
MAY	2765.14	1776.64			278.99	224.03	67.13		49.95	368.40
JUNE	1790.60	1172.64			234.40	47.67	127.87	44.50	68.15	95.37
JULY	4643.89	1212.22	154.13		438.18	224.03	58.20	115.81	481.46	1959.86
AUG	1421.31	1172.64					70.70	10.66	15.76	151.55
SEPT	2029.21	1238.64			238.07	224.03	210.60	8.76	58.68	50.37
OCT	2831.42	1762.26			216.05	224.03	15.84	26.11	176.86	410.27
NOV	2745.66	1261.14		51.32	479.43		135.86	559.51	182.03	76.37
DEC	3376.74	1241.66	184.44	108.71	226.92	233.82	344.86	281.92	647.44	106.97
TOTAL	31209.58	15707.88	338.57	576.97	2964.74	1647.90	1344.95	1158.81	2127.63	5342.13

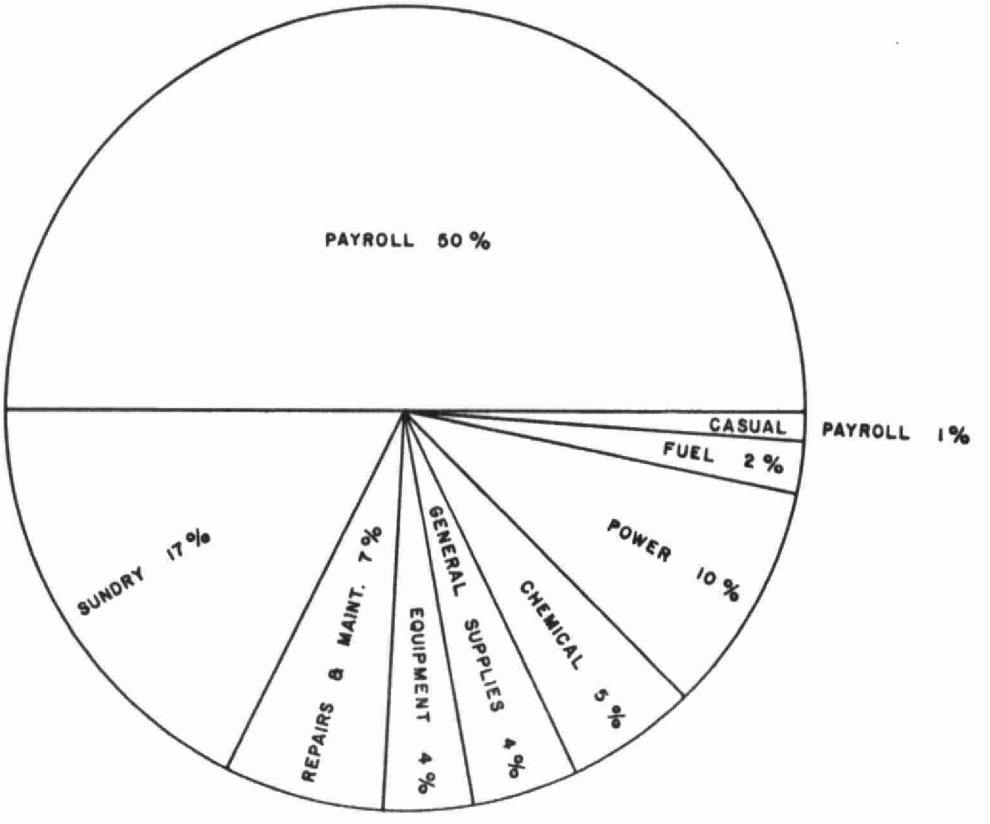
* SUNDRY INCLUDES SLUDGE HAULING COSTS WHICH WERE $3,331.80
BRACKETS INDICATE CREDIT

YEARLY OPERATING COSTS

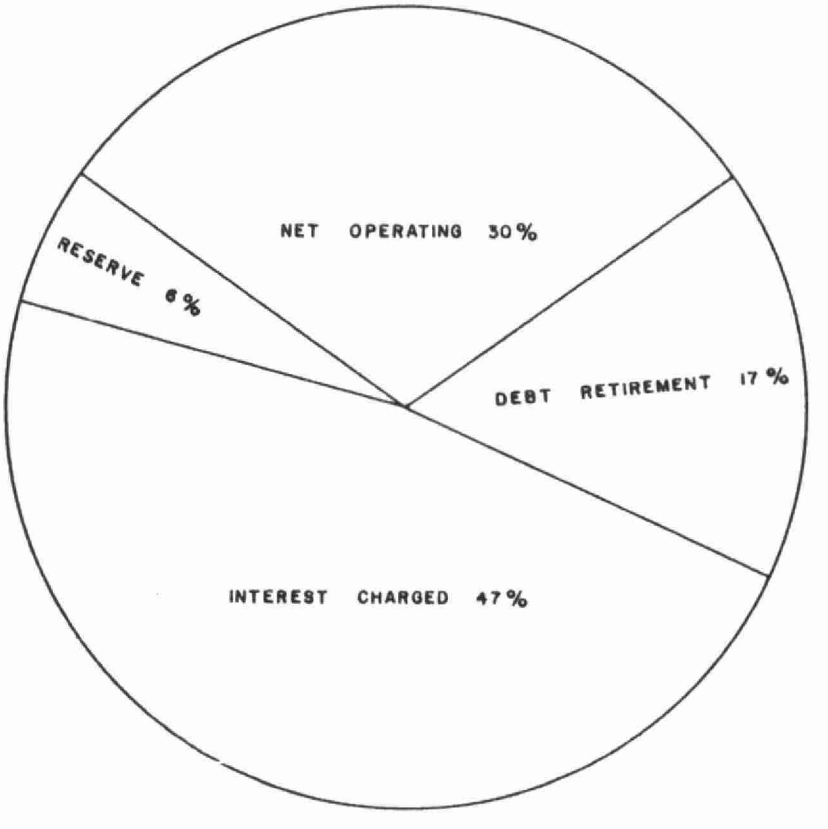
YEAR	M.G. TREATED	TOTAL COST	COST PER FAMILY PER YEAR	COST PER MILLION GALLONS	COST PER L.B. OF BOD REMOVED
1962	351.410	$22842.71	* $ 8.35	$ 65.00	6 CENTS
1963	325.551	26694.78	9.71	81.63	8 CENTS
1964	307.118	29738.15	10.37	96.82	10 CENTS
1965	346.542	31209.58	10.69	90.06	16 CENTS

* BASED ON ESTIMATED ANNUAL POPULATION AND 3.9 PERSONS PER FAMILY

1965 OPERATING COSTS



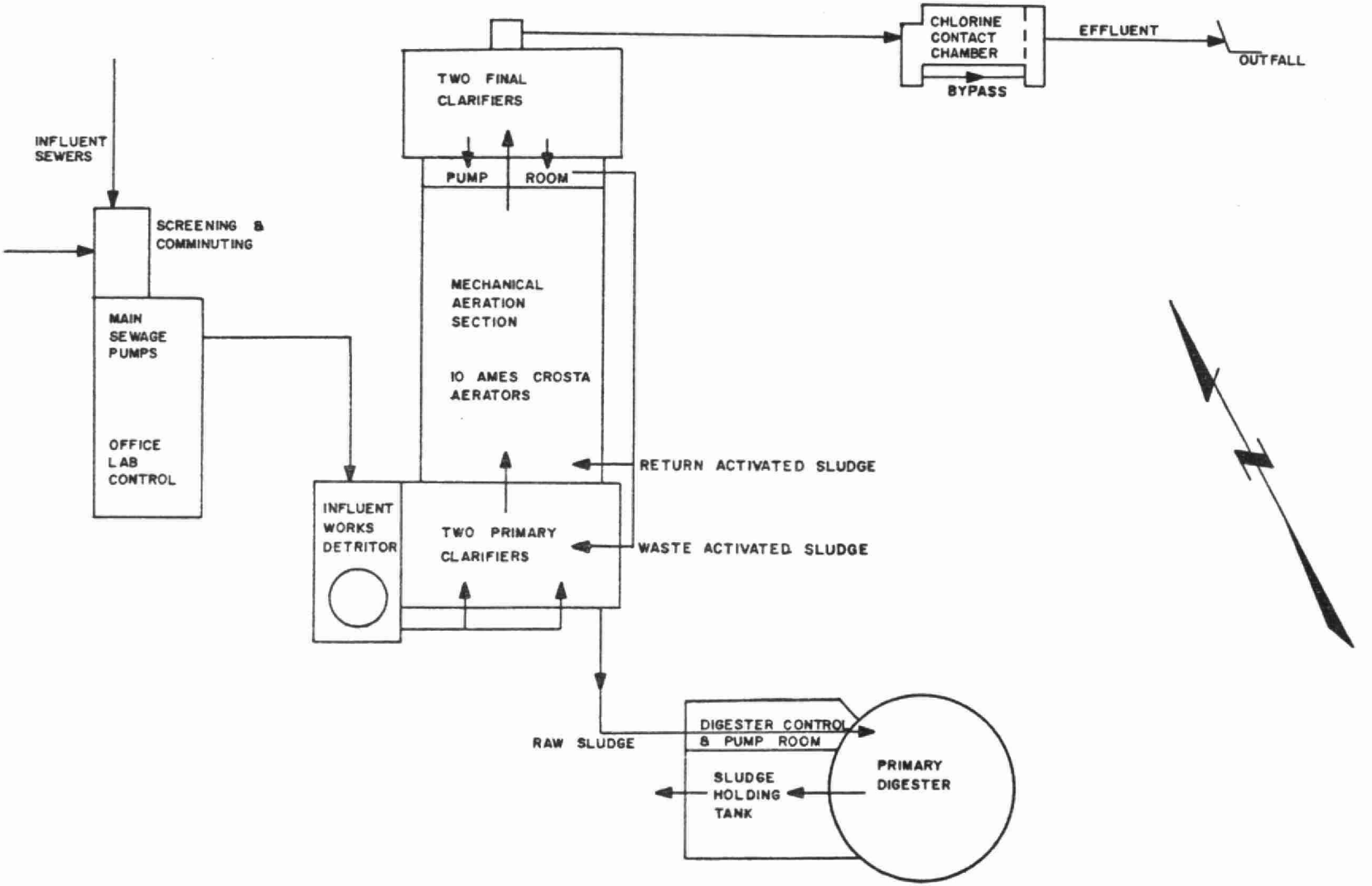
TOTAL ANNUAL COST
(BOTH PROJECTS)



Technical Section

GEORGETOWN S.T.P.

FLOW DIAGRAM



Design-Data

GENERAL

Type of Plant - Activated sludge

Design Population - 15,000 persons

Design Plant Flow - 1.5 mgd

Per Capita Flow - 100 gallons per day.

Five Day BOD -

Raw Sewage - 200 ppm

Removal - 95%

Suspended Solids -

Raw Sewage - 200 ppm

Removal - 95%

PRIMARY TREATMENT

Screening

Coarse bar screens at 3/4 inch spacings.

Comminution

Chicago Pump Company 24 inch, Model C Barminutor.

Sewage Lift Pumps

Two Chicago pumps each capable of 3500 USGPM at 60 ft. discharge head.

Flowmeter

12 inch Parshall flume.

Grit Removal

12 ft. square Dorr Type WA detritor.
Removal - 95% of +65 mesh grit.

Primary Clarifiers

Dorr Type A
Number of Tanks - Two
35 ft. square x 10 ft. side wall depth
Total volume - 24,500 cu. ft. or 153,000 gallons.
Retention - 2.5 hours at design flow.

BOD Reduction - 30%

Surface Settling Rate - 612 Imperial gallons per sq. ft. per day.

Weir Rate - 5,360 Imperial gallons per ft. of weir per day.

SECONDARY TREATMENT

Aeration Section

Ames Crosta Ltd. Simplex mechanical aeration - 8 units.

Number of Tanks - Two

Size of tanks - 28 ft. x 112 ft. x 13.25 ft.
Total volume - 0.495 MG or 79,420 cu. ft.
Retention - 7.91 hours.

Final Sedimentation Tanks

Two Dorr Type AZ square tanks.
Size - 40 ft. x 40 ft. x 10 ft. side wall depth.
Volume - 100,000 gallons each or 16,000 cu. ft. each.

Retention - 3.2 hours.

Surface Settling Rate - 470 gallons per ft. per day.

Weir rate - 4,700 gallons per ft. per day.

Chlorine Contact Chamber

Size - 45 ft. x 15 ft. x 6 ft. deep.
Volume - 27,000 gallons
Retention - 26 minutes

DIGESTION TANKS

Primary - 66 ft. diameter
Volume - 77,800 cubic feet
Dorr draft tube mixers - 3

Secondary - 34 ft. square x 16.25 ft.
Volume - 20,700 cubic feet

Sludge Disposal
Liquid sludge removal by tank truck.

Process Data

FLOWS

From the graph on page 17 showing the average daily flows, it can be seen that the yearly average for 1965 was 0.95 million gallons. Compared to the yearly average of 0.84 million gallons for 1964, the 1965 yearly average was an increase of 13.1%. The major cause for this increase was due to an increased industrial flow during the year.

The maximum and the minimum 24 hour flows during 1965 were 1.33 million gallons and 0.81 million gallons respectively. The daily flow exceeded the design average daily flow 5.5 percent of the time during the year.

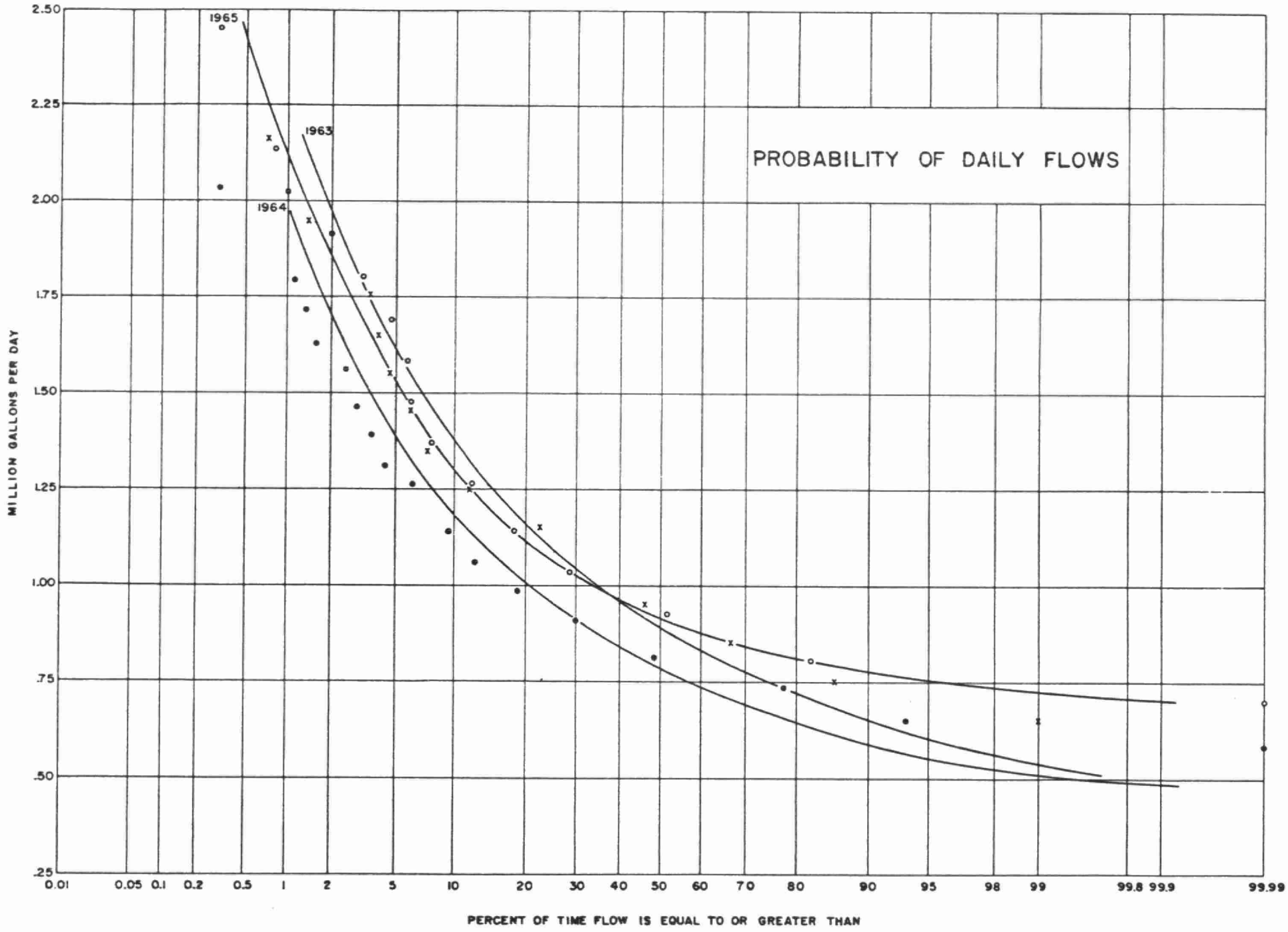
BOD and SUSPENDED SOLIDS

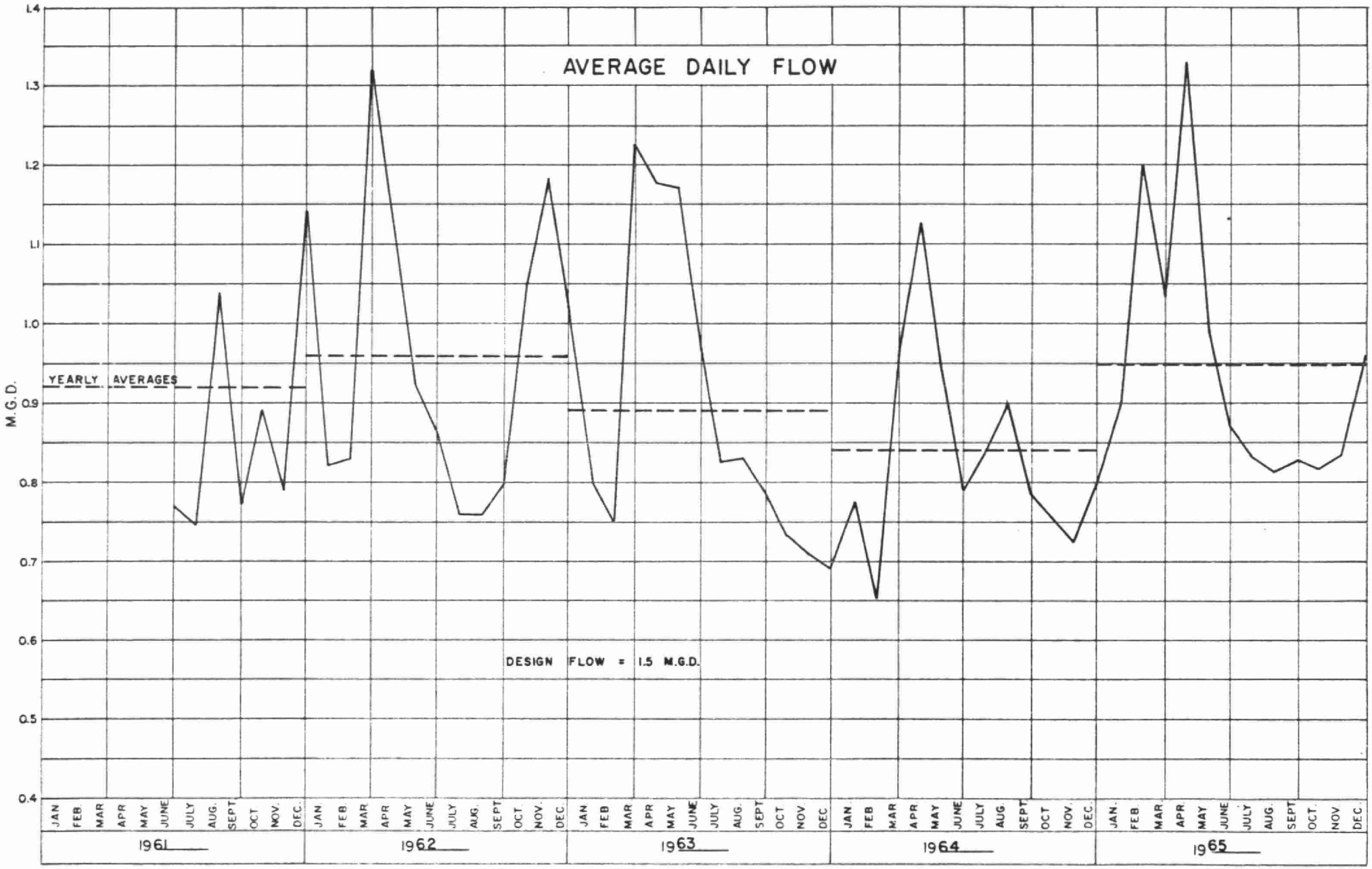
It can be seen from the probability graphs of BOD and suspended solids concentrations that the raw sewage BOD was below the design value 100% of the time. The suspended solids concentration of the raw sewage exceeded the design value 40% of the time. The final effluent BOD and suspended solids concentrations exceeded the Commission objective of 15 ppm 32 % and 67% of the time respectively.

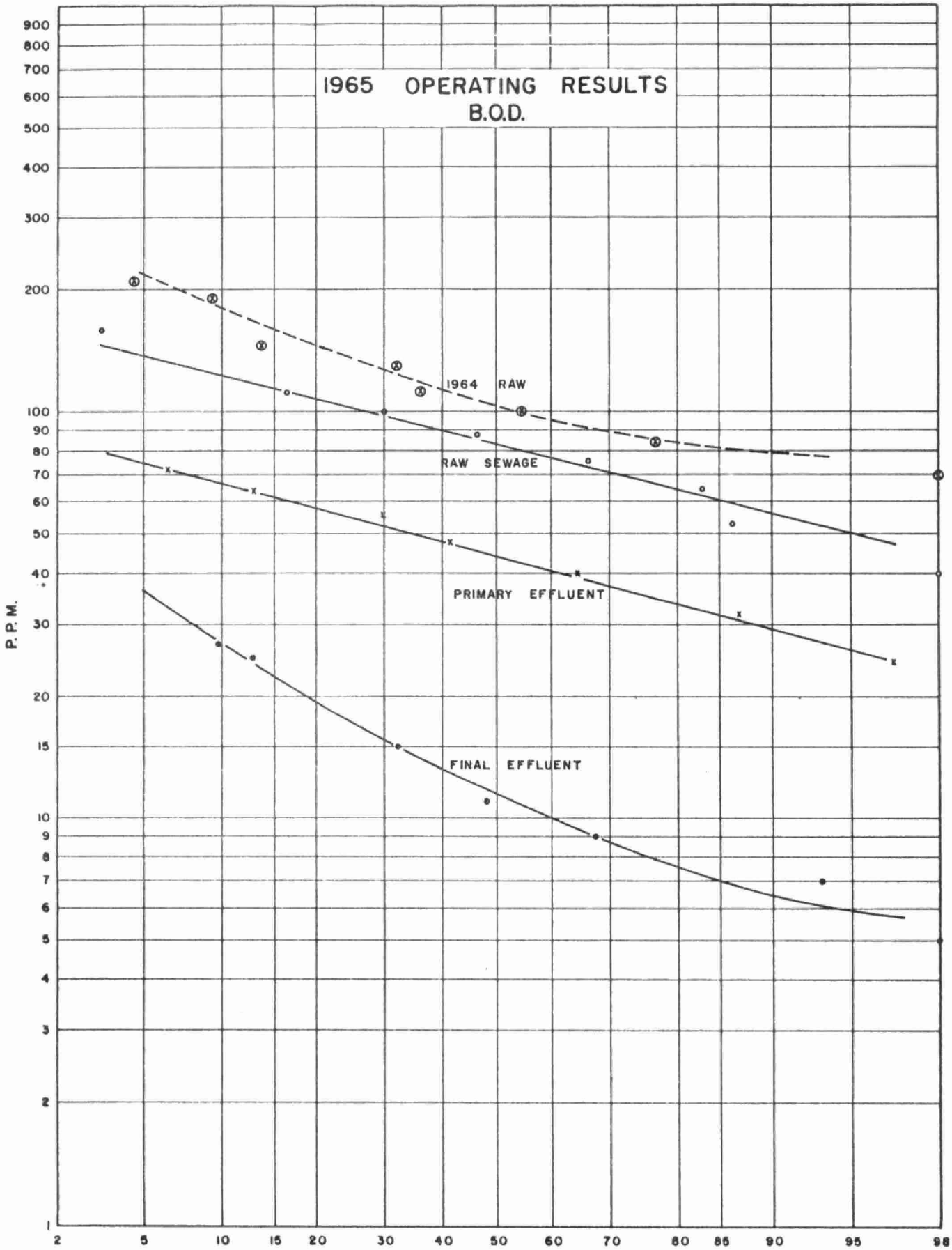
From the graph showing the year average of BOD, it can be seen that, except for peak values of 140 ppm and 73 ppm, the final effluent BOD concentrations for 1965 were below the OWRC objective of 15 ppm.

It is evident from the graph showing the yearly averages of suspended solids that the concentration of raw sewage and final effluent increased during the latter part of 1965.

The major contributing factor for this situation was the industrial waste flows received at the plant during this time. The industrial wastes contained a clay-like substance and proved to be quite high in suspended solids.


PROBABILITY OF DAILY FLOWS
1965
1963
1964
MILLION GALLONS PER DAY
2.50
2.25
2.00
1.75
1.50
1.25
1.00
.75
.50
.25
0.01
0.05
0.1
0.2
0.5
1
2
5
10
20
30
40
50
60
70
80
90
95
98
99
99.8
99.9
99.99
PERCENT OF TIME FLOW IS EQUAL TO OR GREATER THAN


AVERAGE DAILY FLOW
M.G.D.
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
YEARLY AVERAGES
DESIGN FLOW = 1.5 M.G.D.
JAN FEB MAR APR MAY JUNE JULY AUG. SEPT OCT NOV. DEC.
1961
1962
1963
1964
1965


1965 OPERATING RESULTS
B.O.D.
1964 RAW
RAW SEWAGE
PRIMARY EFFLUENT
FINAL EFFLUENT
P.P.M.
900
800
700
600
500
400
300
200
100
90
80
70
60
50
40
30
20
15
10
9
8
7
6
5
4
3
2
1
2
5
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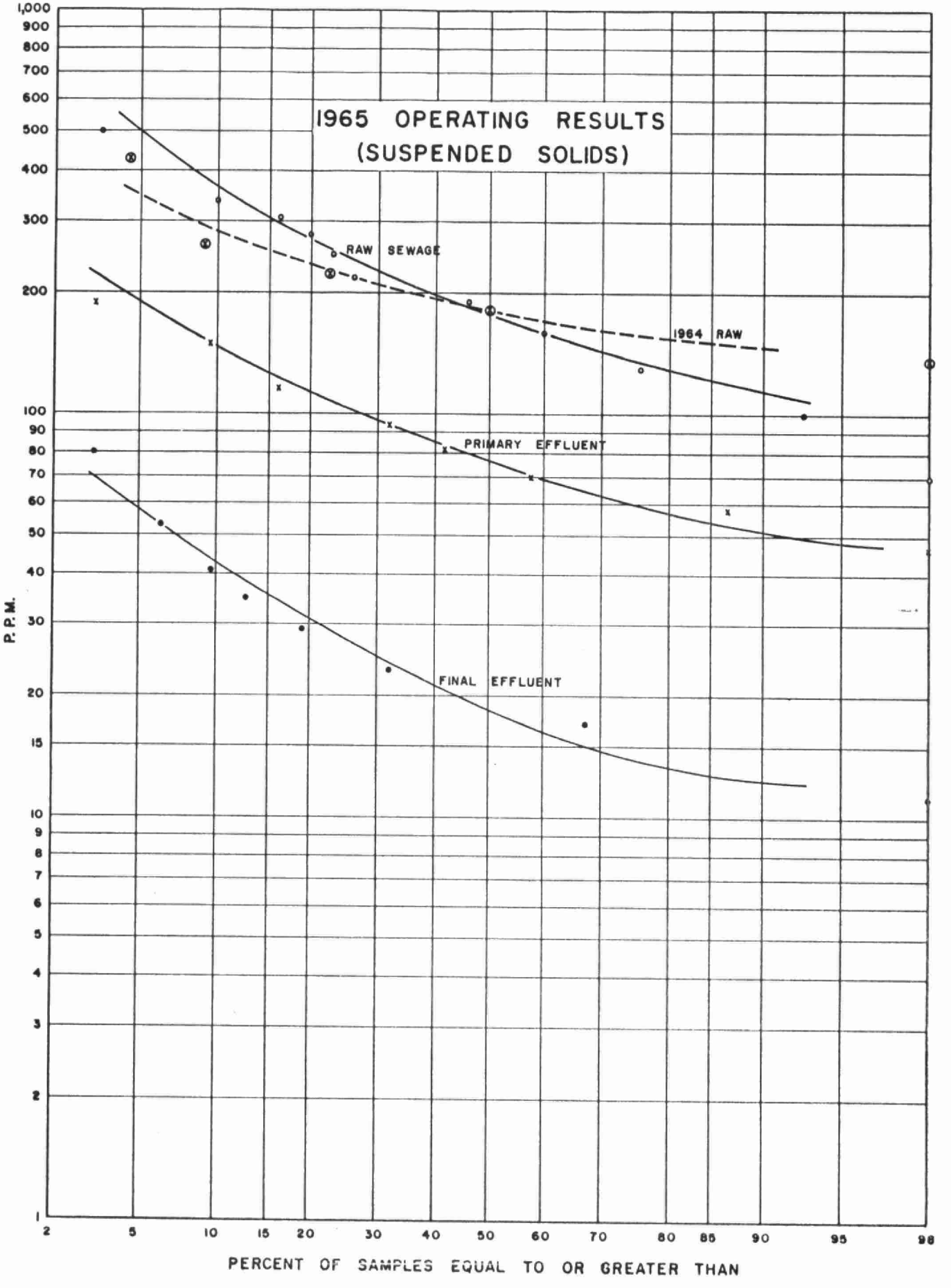
15
20
30
40
50
60
70
80
85
90
95
98
PERCENT OF SAMPLES EQUAL TO OR GREATER THAN


1965 OPERATING RESULTS
(SUSPENDED SOLIDS)
RAW SEWAGE
1964 RAW
PRIMARY EFFLUENT
FINAL EFFLUENT
P. P. M.
1,000
900
800
700
600
500
400
300
200
100
90
80
70
60
50
40
30
20
15
10
9
8
7
6
5
4
3
2
1
2
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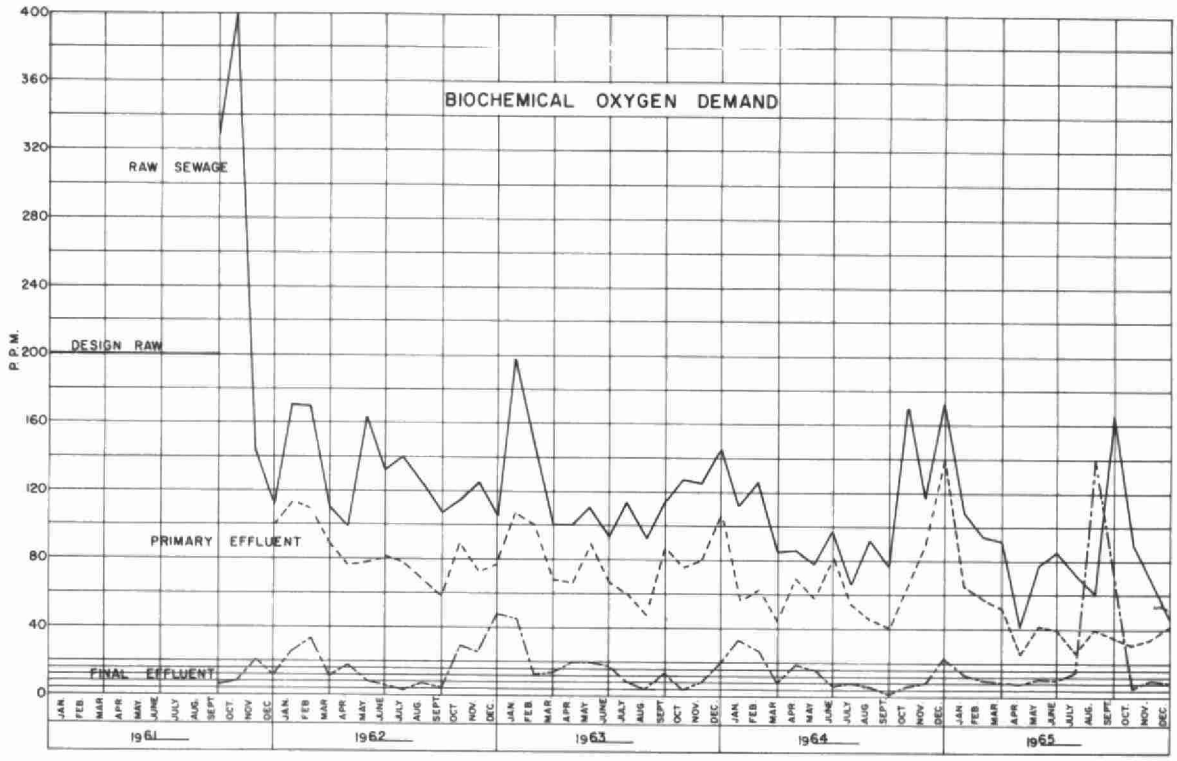
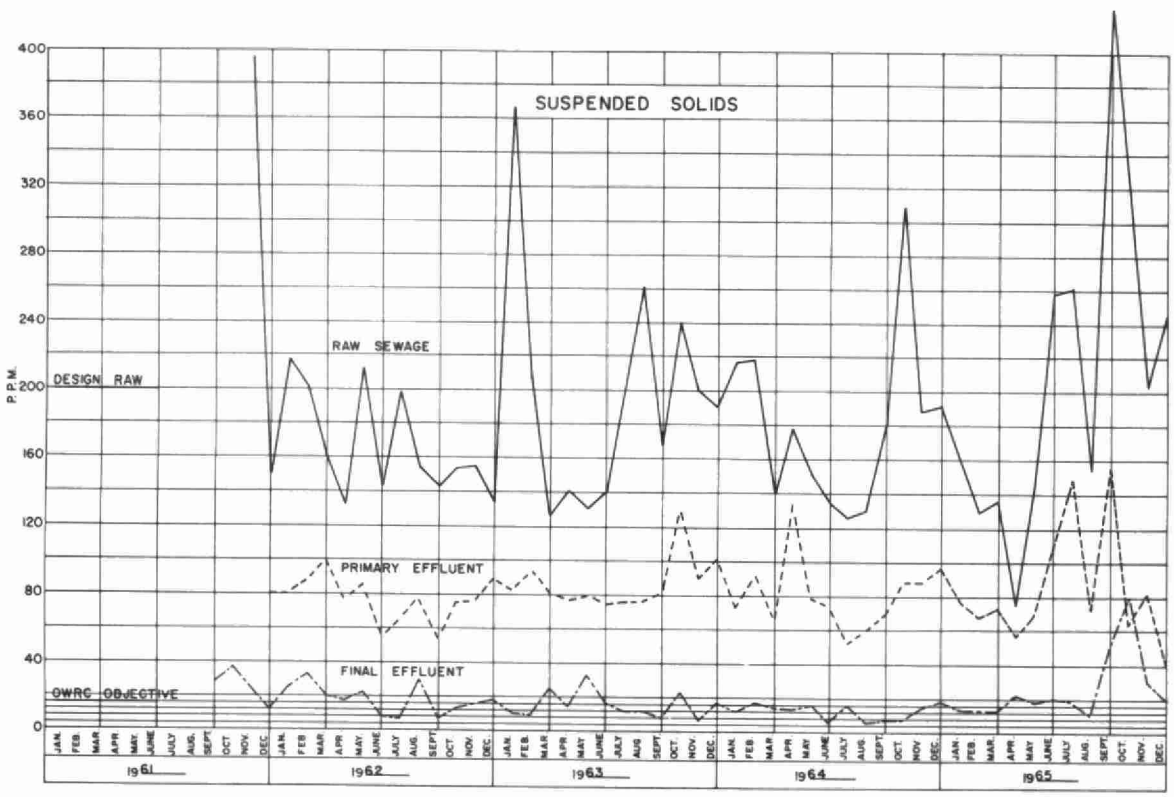
70
80
85
90
95
98
PERCENT OF SAMPLES EQUAL TO OR GREATER THAN



MONTHLY VARIATIONS



GRIT, B.O.D AND S.S. REMOVAL

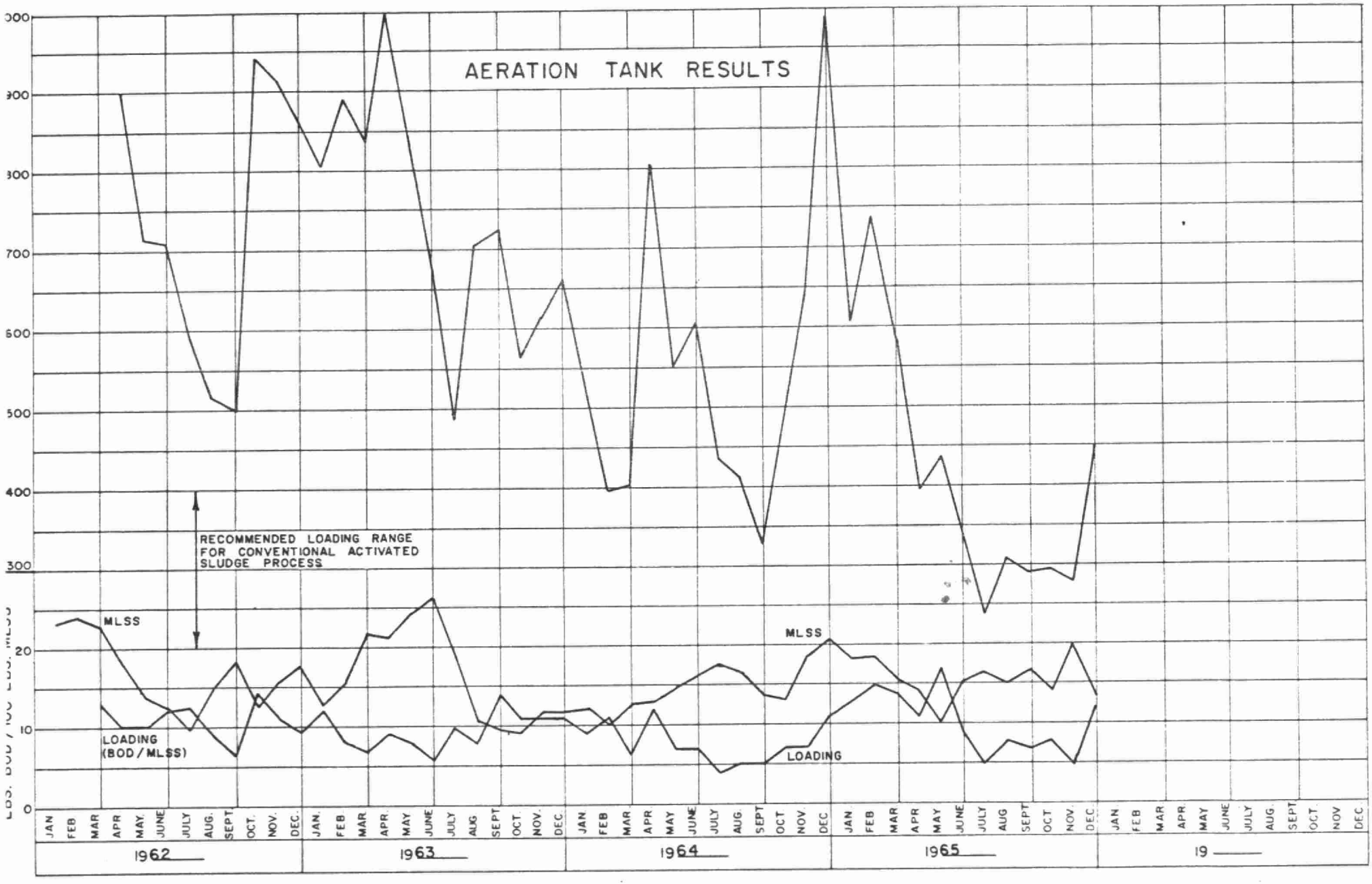
MONTH	B. O. D.				S. S.				GRIT REMOVAL CU. FT.
	INFLUENT P.P.M.	EFFLUENT P.P.M.	% REDUCTION	TONS REMOVED	INFLUENT P.P.M.	EFFLUENT P.P.M.	% REDUCTION	TONS REMOVED	
JAN.	108	14	87.0	13.1	159	14	91.0	20.2	39
FEB.	94	10	89.5	14.1	130	13	90.0	19.7	41
MAR.	92	8.6	90.5	13.4	136	13	90.5	19.7	13
APR.	40	8	80.0	6.4	72	23	68.0	9.8	9.8
MAY	78	10.8	86.0	10.4	146	18	87.5	19.8	9
JUNE	86	10	88.5	10.0	258	20	92.0	31.2	24
JULY	73	15	79.5	7.5	261	18	93.0	31.2	28
AUG.	60	140	+133.5	+10.1	155	11	93.0	18.1	17
SEPT.	165	73	55.5	15.0	507	51	90.0	56.4	40
OCT.	90	5.2	94.0	10.8	336	81	76.0	32.4	71
NOV.	70	9	87.0	7.7	203	32	84.0	21.6	24.9
DEC.	48	8.2	83.0	5.9	246	92.0		33.5	67
TOTAL	-	-	-	100.5	-	-	-	330.9	383.7
AVG.	84	26	69.0	8.4	217	26	88.0	27.6	32.0

COMMENTS

The average reduction of BOD concentration was 69%. The average final effluent BOD concentration of 26 ppm was greater than the OWRC objective of 15 ppm. Due to the discrepancy between the values of the final effluent BOD concentration and the final effluent suspended solids concentration, it is felt that the laboratory analysis of the sample taken in August was in error. During September, the treatment efficiency of the plant was reduced due to the industrial waste flows being received at the plant. Hence, disregarding the values for the BOD concentrations of August and September in the above table, the average reduction of BOD concentration was 86.5% and the effluent BOD concentration was 9.9 ppm. These latter values conform to the OWRC objectives.

The average reduction of suspended solids concentration of 88% was efficient. However, due to the high suspended solids loadings caused by the industrial wastes, the final effluent suspended solids concentrations did not meet the OWRC objective of 15 ppm.

A comprehensive study of the industrial wastes problem at the plant is planned for 1966.


AERATION TANK RESULTS
RECOMMENDED LOADING RANGE FOR CONVENTIONAL ACTIVATED SLUDGE PROCESS
MLSS
LOADING (BOD/MLSS)
MLSS
LOADING
LBS. BOD / LBS. MLSS
0
10
20
300
400
500
600
700
900
JAN FEB MAR APR MAY JUNE JULY AUG. SEPT OCT. NOV. DEC.
1962
1963
1964
1965
19

MONTH	PRIM. EFFL B.O.D. P.P.M.	M.L.S.S. P.P.M.	LBS. BOD. PER 100 LBS. M. L. S. S.	CUBIC FEET AIR PER LB. B.O.D. REMOVED
JANUARY	65	1821	13	-
FEBRUARY	58	1847	15	-
MARCH	54	1562	14	-
APRIL	26	1415	11	-
MAY	43	1000	17	-
JUNE	41	1525	9	-
JULY	27	1640	5	-
AUGUST	40	1505	8	-
SEPTEMBER	36	1671	7	-
OCTOBER	32	1410	8	-
NOVEMBER	34	1988	5	-
DECEMBER	42	1370	12	-
TOTAL	-	-	-	-
AVERAGE	42	1563	10	-

COMMENTS

The average loading of 10 lbs. of BOD per 100 lbs. of MLSS was lower than the recommended 20 to 40 lbs. of BOD per 100 lbs. of MLSS for aeration section operation. The average BOD concentration to aeration section of 42 ppm was less than one third of the design BOD of 140 ppm.

It has not been considered advantageous to increase the ratio of lbs. of BOD to lbs. of MLSS. In order to increase this ratio, with the low BOD loadings, it would be necessary to reduce the lbs. of MLSS. This would render the plant quite susceptible to periodic shock loadings and foaming problems.

DIGESTER OPERATION

Month	SLUDGE TO DIGESTERS			SLUDGE FROM DIGESTERS		
	1000's cu. ft.	% Solids	% Vol. Mat.	1000's cu. ft.	% Solids	% Vol. Mat.
JAN.		7.20	4.57		3.33	1.54
FEB.		9.24	5.25		2.92	1.78
MAR.		6.50	4.30		3.64	1.87
APR.		8.22	5.44		4.29	2.11
MAY		5.94	4.10		4.62	2.16
JUNE		7.80	5.04		5.43	2.74
JULY		8.10	4.78		-	-
AUG.		7.08	4.19		6.70	3.13
SEPT.		9.00	4.59		8.10	3.60
OCT.		8.25	4.00		8.20	3.53
NOV.		10.80	4.88		7.70	3.79
DEC.		6.95	4.09		6.40	2.51
AVG.	10.75	7.92	4.60	5.61	5.58	2.61

COMMENTS

The amount of digester gas produced during the year could not be measured. However, the installation of a gas meter in 1966 will correct this deficiency.

A comprehensive study of the digester operation will be carried out in 1966. This study should provide more complete information on the operation of the digester.

During the latter part of 1965, large volumes of clay were received at the plant suspended in the raw sewage. A portion of this clay was entrapped in the raw sludge and pumped to the digester. This accounted for the low volatile content of the raw sludge and the subsequent lower than expected volatile reduction in the digested sludge. The average reduction in volatile matter during the year was 36.5 percent.

CHLORINATION

MONTH	PLANT FLOW (MG)	POUNDS CHLORINE	DOSAGE RATE (PPM)
JANUARY	27.800	867	3.12
FEBRUARY	33.649	855	2.54
MARCH	32.051	842	2.63
APRIL	39.846	915	2.30
MAY	30.952	938	3.03
JUNE	26.238	869	3.31
JULY	25.727	872	3.39
AUGUST	25.155	883	3.51
SEPTEMBER	24.760	812	3.28
OCTOBER	25.373	836	3.29
NOVEMBER	25.308	784	3.10
DECEMBER	29.683	872	2.94
TOTAL	346.542	10345	-
AVERAGE	28.878	862	2.98

COMMENTS

Chlorination of the final effluent is practiced year-round at all OWRC plants of the Credit River watershed.

In 1965, 10,345 lbs. of chlorine were used at an average rate of 862 lbs. per month or 28.9 lbs. per day. The average dosage of 2.98 ppm was sufficient to maintain a chlorine residual of 0.5 ppm.

CONCLUSIONS

With the exception of a period in the fall, the plant afforded good efficiency in treating the sewage. Throughout the year the plant staff operated a clean, attractive and efficient plant for the Town of Georgetown.

RECOMMENDATIONS

It is recommended that industrial wastes be controlled in order to allow the plant to effectively treat sewage and produce an effluent that is within the Commission objectives.


ONTARIO WATER RESOURCES COMMISSION